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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,931

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EXAMINER

BELL, WILLIAM P

ART UNIT

PAPER NUMBER

1791

NOTIFICATION DATE

DELIVERY MODE

03/05/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/561,931	<b>Applicant(s)</b> SUGIMOTO ET AL.	
	<b>Examiner</b> WILLIAM P. BELL	<b>Art Unit</b> 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 January 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) 11,12 and 14-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/9/2009</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 11-12 and 14-18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9 January 2009.

### ***Drawings***

2. The drawings were received on 9 January 2009. These drawings are acceptable.

### ***Specification***

3. The previous objections to the disclosure are withdrawn in view of Applicant's amendments.

### ***Claim Objections***

4. The objection to claim 8 is withdrawn in view of Applicant's amendments.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Koike (U.S. Patent No. 4,919,388). Regarding claim 1, Koike teaches a mold (see column 3, line 11 and mold in Figure 1), which is capable of being used as a master mold, comprising a support layer comprised of a material (see column 3, lines 14-15 and metal mold 1 in Figure 1) and a fine structure pattern comprised of a glass or ceramic material supported by said support layer (see column 3, lines 15-17 and layer 2 with surface pattern 3 in Figure 1, wherein ceramic is recited and glass is a form of  $\text{SiO}_2$ ), wherein the support layer material has a lower grinding speed than the material of the fine structure pattern (see column 3, lines 17-21, wherein Koike teaches that the ceramic layer is not applied to the surfaces of the mold which are in contact under pressure (for example, the parting line surfaces), thereby prolonging the life of the ceramic layer; it follows then that the uncoated (i.e., the metal) portions of the mold are less vulnerable to abrasion and have a lower grinding speed than the ceramic layer).

Regarding claim 2, Koike teaches a mold wherein the support layer is a metal material (see column 3, lines 14-15).

Regarding claims 8-10, Koike teaches a mold (see column 3, line 11 and mold in Figure 1), which is capable of being used as a master mold, comprising a support layer comprised of a material (see column 3, lines 14-15 and metal mold 1 in Figure 1) and a fine structure pattern comprised of a glass or ceramic material supported by said support layer (see column 3, lines 15-17 and layer 2 with surface pattern 3 in Figure 1,

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wherein ceramic is recited and glass is a form of  $\text{SiO}_2$ ), wherein the support layer material has a lower grinding speed than the material of the fine structure pattern (see column 3, lines 17-21, wherein Koike teaches that the ceramic layer is not applied to the surfaces of the mold which are in contact under pressure (for example, the parting line surfaces), thereby prolonging the life of the ceramic layer; it follows then that the uncoated (i.e., the metal) portions of the mold are less vulnerable to abrasion and have a lower grinding speed than the ceramic layer). Applicant recites a limitation regarding the method of making said mold which imparts no structure to the mold. Therefore the mold taught by Koike reads on the claimed invention.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4 and 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakada (Japanese Patent Application No. JP-10321126) in view of Koike.

Regarding claim 4, Nakada teaches a metal mold which is used as a master mold (see [0033]-[0034] and Drawing 2) wherein the mold is suitable for making plasma display panel ribs (see [0033]). Koike teaches a mold with a metal support layer (see column 3, lines 14-15 and metal mold 1 in Figure 1) and a fine structure pattern comprised of a glass or ceramic material supported by said support layer (see column 3, lines 15-17

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and layer 2 with surface pattern 3 in Figure 1), wherein the support layer material has a lower grinding speed than the material of the fine structure pattern (see column 3, lines 17-21, wherein Koike teaches that the ceramic layer is not applied to the surfaces of the mold which are in contact under pressure (for example, the parting line surfaces), thereby prolonging the life of the ceramic layer; it follows then that the uncoated (i.e., the metal) portions of the mold are less vulnerable to abrasion and have a lower grinding speed than the ceramic layer). Koike teaches that the ceramic or glass layer can be formed in a fluid state (see column 4, lines 10-12) and therefore in any desired pattern (see column 2, lines 25-27). It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the metal mold taught by Nakada with the ceramic or glass pattern forming layer taught by Koike for the benefit of forming the rib structure without machining of the metal by forming the ribs in the pattern layer in the fluid state.

Regarding claim 6, Nakada teaches a mold wherein the fine structure pattern is a grid-like protrusion pattern comprising a plurality of ridge-like protrusions arranged substantially parallel while intersecting one another with predetermined gaps among them (see [0016] and Drawing 7).

Regarding claim 7, Nakada teaches a mold wherein the fine structure pattern comprises ribs having a rib height of 150 to 300  $\mu\text{m}$ , a rib pitch of 150 to 800  $\mu\text{m}$ , and a rib width of 50 to 80  $\mu\text{m}$  (see [0008]).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koike as applied to claim 1 above, and further in view of Yang (U.S. Patent No. 6,382,254).

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Koike does not teach a mold suitable for making microfluidic articles. Yang teaches the manufacture of microfluidic articles using a master mold and the injection molding process (see column 3, line 64 through column 4, line 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to have combined the mold taught by Koike and the master mold for microfluidic articles taught by Yang for the benefit of producing a microfluidic article with desired surface patterns (see Koike, column 1, lines 15-20).

### ***Response to Arguments***

10. Applicant's arguments, see pages 8-10, filed 9 January 2009, with respect to the rejection(s) of claim(s) 1-2 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Koike.

11. Applicant's arguments, see pages 8-10, filed 9 January 2009, with respect to the rejection(s) of claim(s) 4-7 and 10 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nakada and Koike.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM P. BELL whose telephone number is

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(571)270-7067. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:30 pm; Alternating Fridays, 8:00 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Wpb

/Richard Crispino/  
Supervisory Patent Examiner, Art Unit 1791